

Table of Contents

Preface	xvii
----------------------	------

Section 1 Data Warehouses and Simulation Results

Chapter 1

A Multidimensional Model for Data Warehouses of Simulation Results.....	1
---	---

Hadj Mahboubi, Cemagref, France

Thierry Faure, Cemagref, France

Sandro Bimonte, Cemagref, France

Guillaume Deffuant, Cemagref, France

Jean-Pierre Chanet, Cemagref, France

François Pinet, Cemagref, France

Chapter 2

SimExplorer: Programming Experimental Designs on Models and Managing Quality of Modelling Process	19
---	----

Florent Chuffart, Cemagref- Laboratoire d'Ingénierie des Systèmes Complexes, France

Nicolas Dumoulin, Cemagref- Laboratoire d'Ingénierie des Systèmes Complexes, France

Thierry Faure, Cemagref- Laboratoire d'Ingénierie des Systèmes Complexes, France

Guillaume Deffuant, Cemagref- Laboratoire d'Ingénierie des Systèmes Complexes, France

Chapter 3

A Web-Based Tool for Spatio-Multidimensional Analysis of Geographic and Complex Data	32
--	----

Sandro Bimonte, Cemagref, France

Chapter 4

A Systematic Approach for Managing the Risk Related to Semantic Interoperability between Geospatial Datacubes.....	59
--	----

Tarek Sboui, Université Laval and NSERC, Canada

Mehrdad Salehi, Université Laval and NSERC, Canada

Ivan Bédard, Université Laval and NSERC, Canada

Section 2 Ontologies

Chapter 5

Using Ontologies to Relate Resource Management Actions to Environmental Monitoring Data in South East Queensland 82

Jane Hunter, The University of Queensland, Australia

Peter Becker, The University of Queensland, Australia

Abdulmonem Alabri, The University of Queensland, Australia

Catharine van Ingen, Microsoft Research, USA

Eva Abal, South East Queensland Healthy Waterways Partnership, Australia

Chapter 6

A Conceptual Model of Grassland-Based Beef Systems 100

Guillaume Martin, INRA, UMR 1248 AGIR, F-31326 Castanet Tolosan, France

Roger Martin-Clouaire, INRA, UR 875 UBLA, F-31326 Castanet Tolosan, France

Jean-Pierre Rellier, INRA, UR 875 UBLA, F-31326 Castanet Tolosan, France

Michel Duru, INRA, UMR 1248 AGIR, F-31326 Castanet Tolosan, France

Chapter 7

An Ontology-Based Framework for Authoring Tools in the Domain of Sustainable Energy Education 120

Sotirios Karetzos, University of the Aegean, Greece

Dias Haralampopoulos, University of the Aegean, Greece

Konstantinos Kotis, University of the Aegean, Greece

Section 3 GIS-Based Systems and Spatial Analyses

Chapter 8

Application of Support Vector Machines to Melissopalynological Data for Honey Classification.... 144

Giovanna Aronne, University of Naples Federico II, Italy

Veronica De Micco, University of Naples Federico II, Italy

Mario R. Guarracino, Italian National Research Council, Italy

Chapter 9

Urban Versus Rural: The Decrease of Agricultural Areas and the Development of Urban Zones Analyzed with Spatial Statistics..... 154

Beniamino Murgante, University of Basilicata, Italy

Maria Danese, National Research Council, Italy

Chapter 10

Coupling Geographic Information System (GIS) and Multi-Criteria Analysis (MCA) for Modelling the Ecological Continuum in Participative Territorial Planning..... 167

Mireille Batton-Hubert, Ecole Nationale Supérieure des Mines de Saint-Etienne, France

Marie Bonneville, IPAMAC, France

Thierry Joliveau, Université Jean Monnet, France

Pierre-Olivier Mazagol, Université Jean Monnet, France

Frédéric Paran, Ecole Nationale Supérieure des Mines de Saint-Etienne, France

Chapter 11

Spatial Pattern Mining for Soil Erosion Characterization 190

Nazha Selmaoui-Folcher, University of New Caledonia, New Caledonia

Frédéric Flouvat, University of New Caledonia, New Caledonia

Dominique Gay, Orange Labs, France

Isabelle Rouet, University of New Caledonia, New Caledonia

Chapter 12

Describing Spatio-Temporal Phenomena for Environmental System Development: An Overview of Today's Needs and Solutions 211

André Miralles, Maison de la Télédétection, France

François Pinet, Cemagref, France

Yvan Bédard, Université Laval, Canada

Section 4

Decision Support Systems

Chapter 13

Using Soclab for a Rigorous Assessment of the Social Feasibility of Agricultural Policies 228

Françoise Adreit, Université Toulouse 2 - Le Mirail, France

Pascal Roggero, Université Toulouse 1 - Capitole, France

Christophe Sibertin-Blanc, Université Toulouse 1 - Capitole, France

Claude Vautier, Université Toulouse 1 - Capitole, France

Chapter 14

Pyroxene: A Territorial Decision Support System Based on Spatial Simulators Integration for Forest Fire Risk Management 244

Eric Maillé, Cemagref, Mediterranean Ecosystems and Risks Research Group (EMAX), Territorial Management Department (GT), France

Bernard Espinasse, Aix-Marseilles University, Information Sciences and Systems Laboratory, LSIS UMR CNRS 6168, France

Chapter 15

On the Use of Abduction as an Alternative to Decision Trees in Environmental Decision Support Systems	265
<i>Franz Wotawa, Graz University of Technology, Austria</i>	

Section 5

Survey on New Computer-Based Techniques Applied to Agriculture and Environment

Chapter 16

Modeling: A Central Activity for Flexible Information Systems Development in Agriculture and Environment.....	286
<i>P. Papajorgji, University of Florida, USA</i>	
<i>F. Pinet, Cemagref, Clermont Ferrand, France</i>	
<i>A. Miralles, Cemagref, Maison de la Télédétection, France</i>	
<i>E. Jallas, ITK/CIRAD, France</i>	
<i>P.M. Pardalos, University of Florida, USA</i>	

Chapter 17

Data Mining Techniques in Agricultural and Environmental Sciences	311
<i>Altannar Chinchuluun, University of Florida, USA</i>	
<i>Petros Xanthopoulos, University of Florida, USA</i>	
<i>Vera Tomaino, University of Florida, USA & University Magna Græcia of Catanzaro, Italy</i>	
<i>P.M. Pardalos, University of Florida, USA</i>	

Chapter 18

The Role of Crop Systems Simulation in Agriculture and Environment.....	326
<i>K. J. Boote, University of Florida, USA</i>	
<i>J. W. Jones, University of Florida, USA</i>	
<i>G. Hoogenboom, University of Georgia, USA</i>	
<i>J. W. White, USDA-ARS, Arizona, USA</i>	

Compilation of References	340
--	------------

About the Contributors	373
-------------------------------------	------------

Index.....	384
-------------------	------------